

CLAIM AMENDMENTS

1. (canceled)

2. (previously presented) An umbrella comprising:
a shaft anchorable in or on the ground or in the air by
an anchor and defining an axis,
a canopy movable between an unfolded open position in
which it is wavy and a folded position inclined to the axis, made
of a preferably nonstretching membrane or fabric, formed of a whole
number of polygonal sections with outer corners defining
alternating high points and low points, traversed at a center by
the shaft, centrally axially slidable along the shaft or centrally
fixed on the shaft, and having an outer edge, and
an array of rods extending radially from and pivoted on
the shaft and extending in the open unfolded position from the
shaft to the corners, the rods being wholly above the canopy and
not passing through the canopy.

3. (previously presented) The umbrella according to
claim 2 wherein the canopy has an even number $2n$ of high points and
low points so it has n high points and n low points that alternate
at the edge of the canopy in the open position and that impart to
the canopy a wavy shape, the high points tensioning the canopy up
and out and the low points tensioning the canopy down and out.

4 -- 6. (canceled)

1 7. (previously presented) The umbrella according to
2 claim 2 wherein the canopy has a predetermined number n of low
3 points, the canopy being drawn up to and geometrically intersecting
4 the umbrella axis at a center so as to set a conical shape in the
5 canopy.

8. (canceled)

1 9. (previously presented) The umbrella according to
2 claim 2 wherein the canopy has a predetermined number n of edge
3 rods, the edge rods being secured at spaced locations or along
4 their entire length with the respective canopy edge and being
5 alternately inclined to impart a wavy shape to the canopy.

1 10. (previously presented) The umbrella according to
2 claim 2 wherein the canopy is tensioned by a preferably elastic
3 annularly closed canopy-edge bow, the edge bow being secured at
4 spaced locations or along its entire length with the canopy edge
5 and being oppositely inclined to impart a wavy shape to the canopy.

11. (canceled)

1 12. (currently amended) The umbrella according to claim
2 2 wherein the canopy is secured at the center to the shaft or to a
3 runner sleeve slidable on the shaft, the shape of the canopy being
4 variable by changing the axial position along the shaft of the
5 center ~~and/or of the sleeve~~.

1 13. (currently amended) The umbrella according to claim
2 12 wherein, when the canopy is attached to the runner sleeve, in
3 the open position the center of the canopy is freely shiftable
4 along the shaft according to how much the canopy is tensioned, the
5 canopy being sealed at the center to the shaft by the runner
6 sleeve.

1 14. (currently amended) The umbrella according to claim
2 2 wherein ~~in the open position the canopy is freely shiftable at~~
3 ~~the shaft along the shaft according to how much the canopy is~~
4 ~~tensioned~~, the canopy ~~[[being]]~~ is so cut out or constructed at the
5 center that it lightly touches or freely surrounds the shaft and is
6 freely shiftable at the center along the shaft.

15 - 19. (canceled)

1 20. (currently amended) The umbrella according to claim
2 2 wherein the rods include upper rods and lower rods and in the
3 open position of the umbrella, longitudinal axes of the upper rods

4 intersect the umbrella axis at an upper common point and
5 longitudinal axes of the lower rods intersect the umbrella axis at
6 a lower common point below the upper common point.

1 21. (previously presented) The umbrella according to
2 claim 2 wherein in the open position of the umbrella some or all of
3 the rods are tensioned upward into positions necessary for the open
4 position by respective cables extending between outer ends and the
5 shaft.

1 22. (previously presented) The umbrella according to
2 claim 2 wherein in the open position of the umbrella some or all of
3 the rods are tensioned upward into positions necessary for the open
4 position by diagonal spreaders that extend under tension or
5 compression and are preferably pivoted between the rods and the
6 shaft.

23 -- 24. (canceled)

1 25. (previously presented) The umbrella according to
2 claim 2 wherein in the open position of the umbrella some or all of
3 the rods are tensioned downward into positions necessary for the
4 open position by diagonal spreaders that extend under tension or
5 compression and are pivoted between the rods and the shaft.

26. (canceled)

1 27. (previously presented) The umbrella according to
2 claim 2 wherein the umbrella is opened by an opening and closing
3 mechanism having a sleeve or shiftable telescoping shaft tip on
4 which all the rods are pivoted, and that can move downward along
5 the umbrella axis so that all the rods and the canopy mounted on
6 these rods are pushed or pulled by cables and/or diagonal spreaders
7 into positions necessary for the open position until the canopy is
8 fully tensioned and the entire system assumes a stable position as
9 a result of limits established by the static properties and
10 geometry of the canopy, the canopy edge, the edge rods, the edge
11 bow, or the edge cables or by the cables or diagonal spreaders.

28 -- 32. (canceled)

1 33. (previously presented) The umbrella according to
2 claim 2 wherein the sum of the lengths a of the rods measured from
3 the shaft where they engage the respective diagonal spreaders and
4 the lengths d of the diagonal spreaders is the same for all arms,
5 where $a + d = \text{constant}$ so that in particular umbrellas with upper
6 rods and lower rods can be completely folded together.

1 34. (previously presented) The umbrella according to
2 claim 2 wherein the umbrella is closed by an opening and closing

3 mechanism where all the rods and the canopy are secured at the
4 center to a common sleeve so that lifting of the sleeve raises the
5 center and the canopy assumes a closed position folded together at
6 the center.

35 -- 37. (canceled)

1 38. (previously presented) An openable and closable
2 umbrella for protection against sun and rain, the umbrella
3 comprising:

4 a shaft anchorable in or on the ground or in the air by
5 an anchor and defining an upright axis;

6 a canopy movable between an open unfolded position in
7 which it is wavy and a folded closed condition inclined to the
8 axis, made of a preferably nonstretching membrane or fabric, formed
9 of a whole number of polygonal sections with corners defining
10 alternating high points and low points, centrally traversed by the
11 shaft, centrally axially slidable along or fixed on the shaft, and
12 having an outer edge, the canopy being oriented such that in the
13 open position water falling on it flows to the outer edge, the
14 canopy forming between two adjacent sections an open gap;

15 a cable extending from corner to corner across the gap;
16 and

17 an array of rods extending radially from and pivoted on
18 the shaft and extending in the open position from the shaft to the

19 corners of the sections, the rods being wholly above the canopy and
20 not passing through the canopy.

1 39. (previously presented) An openable and closable
2 umbrella for protection against sun and rain, the umbrella
3 comprising:

4 a shaft supported from above and defining an upright
5 axis;

6 a canopy movable between an open unfolded position in
7 which it is wavy and a folded closed condition inclined to the
8 axis, having a closed center below a lower end of the shaft, made
9 of a preferably nonstretching membrane or fabric, formed of a whole
10 number of polygonal sections with corners defining alternating high
11 points and low points, centrally traversed by the shaft, centrally
12 axially slidable along or fixed on the shaft, and having an outer
13 edge, the canopy being oriented such that in the open position
14 water falling on it flows to the outer edge; and

15 an array of rods extending radially from and pivoted on
16 the shaft and extending in the open position from the shaft to the
17 corners of the sections, the rods being wholly above the canopy and
18 not passing through the canopy.